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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/767,540 | 01/29/2004 | Mirmira Ramarao Dwarakanath | ENP-003 | 5353 |

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| EXAMINER | |
|---|---|
| BEHM, HARRY RAYMOND | |
| **ART UNIT** | **PAPER NUMBER** |
| 2838 | |

| MAIL DATE | DELIVERY MODE |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/767,540 | DWARAKANATH ET AL. | |
| | Examiner | Art Unit | |
| | Harry Behm | 2838 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *15 March 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *16-20 and 24-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-20,24-30,34 and 38* is/are rejected.

7)☒ Claim(s) *31-33 and 35-37* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/3/05 has been entered.

### *Response to Arguments*

Applicant's arguments with respect to the amended claims have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 16-30, 34 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Rosenthal (US 6,201,429).

With respect to Claim 16, the prior art of Rosenthal discloses a power converter couplable to a source of electrical power adapted to provide an input voltage thereto, comprising:

a power train (Fig. 1 108) including a switch (Fig. 1 34), referenced to said input voltage (Fig. 1 12) and subject to a control voltage limit, configured to conduct for a duty cycle (Fig. 1 Q' duty) and provide a regulated output characteristic at an output (Fig. 1 36) of said power converter;

a controller configured to provide a signal (Fig. 1 Q) to control said duty cycle of said switch; and a driver (Fig. 1 18-32) including switching circuitry (Fig. 1 20,28) referenced to a voltage level (Fig. 1 17) different from said input voltage (Fig. 1 12) and configured to provide a drive signal (Fig. 1 Q') for said switch within said control voltage limit as a function of said signal from said controller, said switching circuitry including a first pair of series-coupled driver switches (Fig. 1 18,20) of opposite polarity [N,P] having a first common node (Fig. 1 node 18-20) there between, a control terminal (Fig. 1 18 gate) of one of said driver switches (Fig. 1 18) of said first pair of series-coupled driver switches cross coupled to a second common node (Fig. 1 26) between a second pair of series-coupled driver switches (Fig. 1 24,28) of opposite polarity [N,P], and a control terminal (Fig. 1 24 gate) of one of said driver switches of said second pair of series-coupled driver switches cross coupled to said first common node (Fig. 1 node 18-20).

With respect to Claim 17, Rosenthal discloses the power converter as recited in Claim 16 wherein said controller [controller includes 16] is configured to provide a complement (Fig. 1 Qbar) of said signal (Fig. 1 Q) to control said duly cycle of said switch, said driver being configured to provide said drive signal (Fig. 1 Q') for said switch within said control voltage limit as a function, of said complement (Fig. 1 Qbar) of said signal from said controller.

With respect to Claim 18, Rosenthal discloses the power converter as recited in Claim 16 wherein said switch is a metal oxide semiconductor field effect transistor (MOSFET) (Fig. 1 N3) referenced to said input voltage (Fig. 1 12), said switching circuitry configured to provide a gate drive signal for said switch within a gate voltage limit thereof.

With respect to Claim 19, Rosenthal discloses the power converter as recited in Claim 16 wherein said switching circuitry is couplable to said source of electrical power and a bias voltage source for providing a bias voltage (Fig. 1 Vboost), said first (Fig. 1 18,20) and second pair (Fig. 1 24,28) of series-coupled driver switches cooperating to provide said drive signal (Fig. 1 Q') referenced to said input voltage (Fig. 1 12) and within said control voltage limit of said switch.

With respect to Claim 20, Rosenthal discloses the power converter as recited in Claim 16 wherein said switching circuitry enables a mode of operation (Fig. 1 N2 inactive) wherein said drive signal (Fig. 1 Q') for said switch is referenced to said voltage level [Vboost at Vdd].

With respect to Claim 24, Rosenthal discloses the power converter as recited in Claim 16 wherein a voltage (Fig. 1 GND) of said drive signal (Fig. 1 Q') is less than said input voltage (Fig. 1 N2 active).

With respect to Claim 34, Rosenthal discloses the power converter as recited in Claim 16 wherein a control terminal of one (Fig. 1 20) of said driver switches of said first pair of series-coupled driver switches is configured to receive said signal (Fig. 1 Q) from said controller and a control terminal of one (Fig. 1 28) of said driver switches of said

second pair of series-coupled driver switches is configured to receive a complement (Fig. 1 Qbar) of said signal from said controller, said drive signal configured to be produced at a control terminal of another driver switch of said second pair of series-coupled driver switches.

With respect to Claims 25-30 and 38, Rosenthal discloses a method of operating a power converter. See claims 16-20, 24 and 34 for details.

***Allowable Subject Matter***

Claims 31-33 and 35-37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

With respect to Claim 31 and 35, the prior art does not disclose or suggest, in combination with the limitations of the base claim and any intervening claims, primarily, wherein said first common node between said first pair of series-coupled driver switches is connected through a clamp driver switch to a control terminal of one of said driver switches of said second pair.

The aforementioned limitations in combination with all remaining limitations of the respective claims are believed to render the aforementioned indicated claim and any dependent claims thereof patentable over the art of record.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry Behm whose telephone number is 571-272-8929. The examiner can normally be reached on Business EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on 571-2721989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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